

Amendments to the Claims:

The following listing of claims will replace all prior versions, and listings, of claims in the application:

1. (Currently Amended) A method for thinning or eroding a gray image of an input image defined by a plurality of pixels that preserves topological features when the gray image is binarized comprising the step of:

conducting a test of a neighborhood of the plurality of pixels, the neighborhood comprising an at least 3x3 window of pixels having a center pixel;

subtracting a fixed value from the gray image of the center pixel only if the neighborhood test verifies that the thinning/erosion does not break thin features in the resulting binary output image, wherein

the subtracting is performed if the subtracting causes the central pixel to be converted from a foreground to a background, and any of a plurality of templates match the at least 3x3 window of pixels.

2. (Currently Amended) The method according to Claim 1 ~~where the test succeeds and wherein~~ the subtraction subtracting is also performed only if the neighborhood test verifies that the thinning/erosion does not break thin features in a resulting binary output image, and the central pixel would not be converted from a foreground to a background.

3. (Canceled)

4. (Currently Amended) The method according to ~~Claim 3~~Claim 1, where two templates are used wherein the plurality of templates comprises two templates, each of the two templates having four rotated orientations.

5. (Currently Amended) The method according to ~~Claim 3~~Claim 1, where wherein one of two at least 3x3 templates would match.

6. (Currently Amended) The method according to ~~Claim 3~~Claim 1, ~~where~~wherein one ~~of the plurality of templates is a 3x3 template consists of~~that comprises three strong ~~background~~backgrounds along one side and one strong foreground in ~~the~~a middle of the opposite side.

7. (Currently Amended) The method according to ~~Claim 3~~Claim 1, ~~where one~~wherein ~~template consists of three strong background in one corner and two strong foreground in the middle of the sides of the opposite corner~~one of the plurality of templates is a 3x3 template that comprises a strong background in a corner of a first side and a second side, a strong background in a middle of the first side, a strong background in a middle of the second side, a strong foreground in a middle of a third side, and a strong foreground in a middle of a fourth side.

8. (Currently Amended) The method according to ~~Claim 5~~Claim 4 ~~where~~wherein the test is performed by comparing ~~at the~~at least 3x3 window with all four ~~rotated~~rotated orientations of the two templates.

9. (Currently Amended) A system for thinning or eroding a gray image of an input image defined by a plurality of pixels that preserves topological features when the gray image is ~~binarized~~binarized, comprising ~~the step of:~~

a module that tests a neighborhood of the plurality of pixels, the neighborhood comprising an at least 3x3 window of pixels having a center pixel;

~~means for subtracting~~a module that subtracts a fixed value from the gray image of the center pixel only if ~~the~~a neighborhood test verifies that the thinning/erosion does not break thin features in ~~the~~a resulting ~~output binary image~~image, ~~wherein~~

the module subtracts the fixed value if it causes the central pixel to be converted from a foreground to a background, and any of a plurality of templates match the at least 3x3 window of pixels.

10. (Currently Amended) The system according to ~~Claim 9~~Claim 9, ~~where the test succeeds and means for wherein the subtraction~~subtracts also is performed only ~~if the neighborhood test verifies that the thinning/erosion does not break thin features in a resulting binary output image, and~~ the central pixel would not be converted from a foreground to a background.

11. (Canceled)

12. (Currently Amended) The system according to ~~Claim 11~~Claim 9, ~~where~~wherein one of the plurality of templates is a 3x3 template ~~consists of~~that comprises three strong ~~background~~backgrounds along one side and one strong foreground in ~~the~~a middle of the opposite side.

13. (Currently Amended) The system according to ~~Claim 11~~Claim 9, ~~where one template consists of three strong background in one corner and two strong foreground in the middle of the sides of the opposite corner~~wherein one of the templates is a 3x3 template that comprises a strong background in a corner of a first side and a second side, a strong background in a middle of the first side, a strong background in a middle of the second side, a strong foreground in a middle of a third side, and a strong foreground in a middle of a fourth side.

14. (Currently Amended) The system according to ~~Claim 11~~Claim 9, ~~where~~wherein the test ~~is performed by means for~~comprises comparing ~~at the~~at least 3x3 window with all four rotated orientations of ~~the two~~ of the templates.

15. (Currently Amended) A method for thinning or eroding a gray image of an input image defined by a plurality of pixels that preserves topological features when the gray image is binarized ~~comprising the step of:~~

conducting a test of a neighborhood of the plurality of pixels, the neighborhood comprising an at least 3x3 window of pixels having a center pixel; and

subtracting a fixed value from the gray image only if ~~at the~~ neighborhood test verifies that the thinning/erosion does not break thin features in ~~the~~ resulting binary output image, wherein ~~the test succeeds~~;

~~subtraction~~the subtracting is performed if the subtracting does not cause the central pixel ~~would not~~ be converted from a foreground to a background; and

~~subtraction~~the subtracting also is performed if the subtracting causes the central pixel ~~would~~ be converted from a foreground to a background and either of two templates match ~~the~~ at least 3x3 window of pixels.

16. (Currently Amended) The method according to ~~Claim 15~~Claim 15, ~~wherein~~ one of the templates is a 3x3 template consists of that comprises three strong ~~background~~backgrounds along one side and one strong foreground in ~~the~~ middle of the opposite side.

17. (Currently Amended) The method according to ~~Claim 16~~Claim 16, ~~where one~~ template consists of three strong background in one corner and two strong foreground in the middle of the sides of the opposite corner wherein one of the templates is a 3x3 template that comprises a strong background in a corner of a first side and a second side, a strong background in a middle of the first side, a strong background in a middle of the second side, a strong foreground in a middle of a third side, and a strong foreground in a middle of a fourth side.

18. (Currently Amended) The method according to ~~Claim 17~~Claim 17, ~~wherein~~ the test is performed by comparing at the at least 3x3 window with all four rotated orientations of the two of the templates.